



Fish Production and Export Challenges in Nigeria

Sule Abiodun,
Oluwajoba Edward;
Ayaobu-Cookey, Ibifubara

Nigerian Institute for Oceanography and Marine Research

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Abstract

Despite its abundant fisheries resources, Nigeria's fish trade is below expectation. In other words, Nigeria's low fish export revenues are ascribed to under-exploitation, energy reliance, and marine piracy. Export-focused fishing fleets have dwindled from nearly 230 vessels to 119, with just a few enterprises left. This study examines Nigeria's fish production and export issues due to its low international fish trading performance. It was carried out in selected areas in Ikorodu and Epe in Lagos where 152 fish-farmers were studied. Data collected were analyzed descriptively using frequencies and percentages. The study lists some issues with sending fish abroad: Poor governance in the management of fish stocks, illegal, unreported, and unregulated fishing, a lack of efficient, quality, and affordable farm-made feeds for various stages of fish development, and a lack of technical skills all contribute to poor governance. Fish exports' relation to farming was also found: Fish exports pay other purchases, and employment, value addition, and export profits grow the agricultural industry. The result of the study further revealed how to resolve the Nigerian fish export difficulties which include: Farm worker training on feed and basic materials acquisition, processing, and storage; Formulating, packaging, and storing commercial feeds; Farm water quality records; Fish ages, species, and disease indications; Creating a disease monitoring and reporting animal research facility. It is therefore safe to say that Nigeria's fish exports are failing owing to many issues, according to studies and thus suggested some measures to adopt in countering these trends.

Keywords: Fish production, export, challenges

I. Introduction

Given the nature of export and import flows produced, the contribution of global commerce to economic development has been

widely recognised (Ambali & Ayinde, 2019). One of the most widely traded food commodities worldwide is fish and fisheries products. The creation of jobs, the provision of food, the generation of money, and the contribution to economic growth and development are all significantly influenced by trade in the fishing sectors of many developing countries, including Nigeria. Production and demand linkages, economies of scale brought about by larger international markets, increased efficiency, adoption of better technologies embodied in investment products produced abroad, learning effects, and improvement of human resources are just a few ways that trade activities stimulate growth (Maureen et al., 2002). Nigeria is one of the few African nations that imports and exports fish on a regular basis, albeit it has a small market share when compared to some of the more industrialized countries like China and the USA. The lack of necessary technical skills, inadequate availability of financing facilities, and a shortage of high-quality, reasonably priced fish seeds and feeds all limit the growth and development of Nigeria's fishing industry, which is mostly undeveloped (Odifa, 2023).

Nigeria, the most populous nation in Africa, continues to have a large population, and fish continues to be an important part of many people's diets. With a population of over 200 million, the nation has the biggest demand for fish in Africa (Adeleke et al., 2021). According to Kaleem and Sabi (2001), fish has been identified as a nutritious, low-cost source of protein. The four main sources of fish for the nation are artisanal fisheries (from coastal and brackish waters as well as inland lakes, dams, and rivers), industrial marine fishing, aquaculture, and imported frozen fish. However, there is a big disparity between local availability and demand for fish, thus the majority of the supply is imported. As the natural fish supplies cannot be overstretched and face several challenges,



one of which is poor catch, local fish output has remained insufficient to meet the nation's demand for fish and fishery products (FAO, 2015).

Despite having abundant fisheries resources, Nigeria's fish trade is out of balance since the import value of frozen fish outrageously exceeds the export value of fishery products such as prawns, ornamental fish, frozen fillet and cuttlefish, among others (Ochuko, Jerimoth & Eyo, 2022). Low foreign earnings from Nigerian fish exports have been attributed to a number of factors, including underexploitation of fishery resources, an excessive reliance on the oil industry, and sea piracy. As a result, there are now far fewer export-oriented fishing fleets operating, down from about 230 vessels to just 119 vessels and a handful of companies (Akinwumi, 2014). Due to the current poor performance of Nigerian fish trade on the global market, this study is looking at Nigeria's issues with fish production and export.

Statement of research problem

According to the International Trade Administration of the U.S. Department of Commerce, Nigeria has a potential market for over 2.5 million metric tonnes of fish worth at \$3 billion. To meet local demand, however, there is a significant reliance on imports because of indigenous catches that are underdeveloped, the prohibition on catfish and tilapia, restrictions, and the coronavirus epidemic. Nigeria's yearly demand for fish is 3.6 million tonnes, but the nation only produces 1.1 million tonnes, creating a gap of around 2.5 million tonnes that must be filled by imports (IFAD & FAO, 2015). The Central Bank of Nigeria (CBN) has listed fish and other seafood as items that are not valid for forex from the official interbank market, despite the fact that numerous measures have been taken over the years to increase domestic fish production and stop fish importation into Nigeria, including the Import Quota Policy on Fish, Duty Cut on Imports of Dried Stock Fish from 20% to 10% for Norway, and Import Quota Policy on Fish. Despite all of these efforts, Nigeria suffered a severe blow in March 2018 when the Food Safety and Inspection Service of the USDA banned the export of fish products from that nation (MMS, 2021).

Small-scale fisheries (SSF) confront a number of difficulties that have restricted their ability to engage in export trade, including diminishing catch rates, inconsistent rules, and inadequate policy execution (FAO, 2015). Small-scale fisheries and participatory approaches are not sufficiently taken into consideration by the current

fisheries governance framework. Other significant challenges facing small-scale fisheries (SSF) include a lack of funding to increase their investment in cutting-edge equipment and vessels that will improve their fishing operations and a lack of enabling legislation that can adequately protect SSF's rights. Fish farmers in Nigeria are facing significant challenges that are impeding the sector's expansion, including high feed prices and the continued restriction on fish exports to the United States (Odifa, 2023). The Federal Department of Fisheries, Nigeria, attributes the act that prohibited the export of fish from Nigeria to the USA to the importation of substandard goods into the country and poor documentation of the fish (Ibirogbam, 2022).

Local fish farmers also face a number of difficulties, such as high fish prices that are driving consumers to prefer imported fish that are more affordable and rising fish feed costs that have trebled farmers' production expenses (Odifa, 2023).

Research objectives

The study specifically aims to;

1. Identify the challenges encountered in fish exportation.
2. Ascertain the significance of fish exportation to the **agricultural** sector.
3. Suggest ways in which the issues associated with fish export can be tackled.

Research questions

1. What are the challenges encountered in fish exportation?
2. What is the significance of fish exportation to the agricultural sector?
3. In what ways can the issues associated with fish export be tackled?

II. Literature review

Overview of fishery

Through royalties and other forms of financial recompense within the parameters of the numerous fishing agreements, the fishing industry and aquaculture sector significantly increase the country's revenue. They are crucial in providing for the dietary requirements of those with limited purchasing power. They are a significant source of new employment, with the majority coming from the artisanal fishing sector.

The rational upbringing of fish in a contained, relatively shallow body of water where all of its life processes may be managed is known as aquaculture. It is a crucial sector for the growth of



the country's economy at a time when the government is looking for methods to diversify the economy away from being solely dependent on the oil industry (Adewumi & Fagbenro, 2010). By producing fish for human consumption and indirectly by creating jobs for the growing unemployed population, it has the ability to improve the food security of the country. It can also help save foreign currency and earn foreign currency through the export of fish and fish products. In order to meet the increased demand for fish and fish products and to diversify its oil-based economy, the Federal Government of Nigeria has recently been actively pushing the growth of the agricultural sector (Adewumi, 2015). The goal of the federal government is to increase fish production to a point where fish products are eventually exportable. The state's economy is heavily reliant on international trade. The expansion of labour productivity and income is facilitated by international commerce, which also fosters the mobilisation and more efficient use of each nation's potential. Despite being the main source of income for many coastal residents, the fisheries subsector is sadly underdeveloped. The annual demand for aquatic food supply has significantly increased due to factors including rapid population expansion in developing nations like Nigeria, rising disposable income, and shifting consumer preferences. Large-scale depletion of fish resources has been caused by the proliferation of more effective capture technology, decades of government subsidies, improved market access, including for isolated fishing communities, and development programmes intended to raise production from the vulnerable open-access resource. Therefore, it is impossible to overstate the need of making long-term investments to ensure the sustainability of aquaculture production. The production of food is mostly dependent on fishing and aquaculture, and as income levels rise and populations in Asia and Africa increase, there will be a major increase in demand for high-quality aquatic protein (Delgado et al., 2003).

Nigeria, Senegal, Ghana, and Sierra Leone are the countries that produce the most fishery resources. Analysis of the industry, however, shows that fisheries and aquaculture in West Africa continue to face difficulties, including: poor governance in the management of fish stocks; low promotion of fisheries products; importance of illegal, unreported, and unregulated fishing; threats to the marine environment made worse by poor fishing practises; and insufficient coordination and cooperation among regional institutions. The

"Improvement of Regional Governance of Fisheries and Aquaculture in West Africa" (PESCAO) programme, for example, aims to increase the contribution of fisheries resources to the sustainable development of food security and poverty alleviation in West Africa. It also aims to improve regional fisheries governance in its area by better coordinating national fisheries policies (ARAA, 2021).

Empirical review

The challenges facing the supply chain of the export-oriented Vietnamese aquaculture sector have been brought to light by Hong, Tran, Philippe, and Hossein (2019), including the market situation, exportation, the feed industry, middlemen, and concepts for sustainable aquaculture. These issues should be taken into consideration by policymakers, the industry, and business for the sector's future development. According to the article's conclusion, there is a lack of focus on the need for sustainable and all-encompassing action plans to increase Vietnam's exports of animal-based aquatic foods, which can have a variety of detrimental effects on the environment, the economy, and society, including low value-added, a lack of responsiveness to changes in the global market, traceability restrictions, problems with food safety, and a lack of branding/eco certification.

Theoretical review: Classical International Trade Theorization

Classical international trade theorization is the theory of comparative advantage propounded by Richardo (1817) to explain the underpinning principles of international trade. According to the richardian theory, "comparative" rather than "absolute" advantages provide the basis for international trade. This implies that it is not the absolute but the comparative differences in costs that determine trade relationship between two countries (Ambali & Ayinde, 2019). The theory maintained that due to differences in climate, natural resources, geographical situation and efficiency of labour, a country can produce one commodity at lower cost than the other. As a result, when a nation engages in commerce with another nation, it will export goods for which its comparative production costs are lower and import goods for which they are higher. The Richardian theory, among other things, presupposes that there are only two countries involved in international trade, that the two participating countries produce identical goods, that both countries' tastes are similar, that labour is the only factor of production, that labour is always



available, that labour is homogeneous, and that the factors of production are perfectly mobile. However, some of these presumptions have come under heavy fire, and current economists have adjusted others (Haberler, 1950; Heckscher & Ohlin, 1991). By expanding the idea to encompass a variety of items, Haberlers (1950) challenged the presumption that only two goods were traded between two nations. It follows that a nation has a comparative advantage over another in terms of all the goods it exports in comparison to all the goods it imports. By attributing the comparative advantage to variations in factor endowment and cost variances in factor pricing across nations, Heckscher & Ohlin (H-O) (1991) enhanced the richardian theory. According to the H-O theory, nations with a lot of labour will export commodities that require a lot of work, whereas nations with a lot of capital will export things that require a lot of capital. According to this idea, differences in commodity prices based on relative factor endowments and factor pricing are the primary driver of trade across areas. Accordingly, Leung and Cai (2005) proposed that comparative advantage can be alternatively obtained either through an increase in benefit gained by the production activity or a reduction in its opportunity cost. By implication, comparative advantage is determined by both consumer preference (demand-

side factors) and factor endowment and technologies (supply-side factors).

III. Methodology

In this investigation, a multistage sampling strategy including basic random sampling and purposeful sampling was used. Ikorodu and Epe, the two agricultural zones in Lagos State, were purposefully chosen for the initial step. From each zone, two extension blocks were randomly selected. Twenty-five fish growers from each block were chosen at random for the third stage. Thus, a total of 150 respondents were chosen from the State's four expansion zones. The chosen fish farmers received the structured questionnaires. Percentage and mean scores were used to analyse the questionnaire data.

Data presentation, analysis and discussion

For this study 150 questionnaire was distributed physically to respondents at there various places of work and the researcher waited to collect the answered questionnaire. 150 questionnaire distributed were fully returned, however, about 5 questionnaire was badly answered and thus discarded. The analysis was therefore based on 145 sample size as presented below

Table 1: Demographic information

Variables	Frequencies (n=145)	Percentage (n=100)
Gender		
Male	98	67.6
Female	47	32.4
Age group (in years)		
18-30	45	31.0
31-40	67	46.2
41-50	23	15.9
50 andabove	10	6.9
Working experience as fish farmer (in years)		
1-5	35	24.1
6-10	82	56.6
More than 10 years	28	19.3

Field survey (2023)

The participants in the study are of both genders, with males comprising 67.6% of the total population and females the remaining 32.4%, indicating that fish aquaculture is not gender-specific. Any individual, regardless of gender, can be a fish cultivator. The study also revealed that fish

farmers belonged to various age groups, ranging from 18 to 30 years old (31% of the examined population) to 31 to 40 years old (46.2%), 41 to 50 years old (15.9%), and 50 and older (6.7%). Additionally, fish producers have varying levels of professional experience. While approximately



24.1% of the population has worked for less than five years, 56.6% have between 6 and 10 years of experience in fish aquaculture, and 6.9% have more than ten years of experience. The aggregate findings

indicate that the fish producers who participated in this study were sufficiently representative in terms of gender, age, and work experience.

What are the challenges encountered in fish exportation?

Table 2: The challenges encountered in fish exportation

ITEMS		SA	A	D	SD	Total % in support of the statement (n=145)
Poor governance in the management of fish stocks	F	23	99	11	12	84.1
	%	8.3	68.3	7.6	8.3	
Illegal, unreported, and unregulated fishing	F	56	69	7	13	86.2
	%	38.6	47.6	4.8	8.9	
Lack of efficient quality and inexpensive farm-made feeds for different stages of fish development	F	60	77	5	3	94.5
	%	41.4	53.1	3.4	2.1	
Improper documentation of the imported fish	F	99	39	2	5	95.2
	%	68.3	26.9	1.4	3.4	
Poor access to credit facilities	F	77	65	1	2	98.0
	%	55.1	44.8	0.7	1.4	
Lack of requisite technical skills	F	35	89	15	6	85.5
	%	24.1	61.4	10.3	4.1	

Field survey (2023)

The percentage of respondents who supported each item in the table ranges from 84.1% to 98.0%, indicating that all of the items/statements were accepted. This implies that the following are difficulties associated with fish and seafood export: Poor governance in the management of fish stocks; Illegal, unreported, and unregulated fishing; Lack of efficient quality and inexpensive farm-made feeds for different stages of fish development; Improper documentation of imported fish; Inadequate access to credit facilities; and Lack of required technical skills. Similar factors were also identified by FAO (2002) as obstacles confronting the exportation of

fish, which corresponds to the conclusion of this study. Adewumi (2015) found that fish farming in Nigeria lacks sustainability, whereas Ababouch, Gandini, and Ryder (2005) found that fish farming in developing countries focuses more on subsistence farming than commercial farming, eliminating the need for exports. Sharif, Niazi, and Jabbar (2014) also identified some challenges in fish exportation. According to the study, major obstacles to fisheries production and exports include a decline in seafood resources, a lack of prawn culture, insufficient facilities at fish markets, a lack of a sustainable fishing strategy, and poor export pricing of seafood.

What is the significance of fish exportation to the agricultural sector?

Table 3: The significance of fish exportation to agricultural sector

ITEMS		SA	A	D	SD	Total % in support of the statement
Fish exportation impacts on the growth of the agricultural sector	F	77	65	1	2	98.0
	%	55.1	44.8	0.7	1.4	
Generates export revenue, employment and value addition	F	99	39	2	5	95.2
	%	68.3	26.9	1.4	3.4	
Foreign exchange from fish exports helps to finance imports of other foods	F	60	77	5	3	94.5
	%	41.4	53.1	3.4	2.1	

Field survey (2023)



The second research question investigated the importance of fish exports to the agricultural sector. All the items in the table indicate support, with over 80 percent of respondents agreeing with each statement. The study determines that the significance of fish exportation to the agricultural sector consists of the following: fish exportation influences the expansion of the agricultural sector, Generates export revenue, employment and value addition, The foreign currency generated by fish exports helps finance the importation of other commodities. This study's findings align with those of Emam et al. (2021), who reached similar conclusions. According to Emam et al., (2021), fish exports, similar to other forms of exports, may increase production efficiency and have positive

knock-on effects. In addition to the monetary value, fish exports are a significant source of foreign currency for many developing countries. Professionals and unsophisticated individuals can find employment in the fishery industry. Béné et al. (2015) also highlight the significance of fish exports to the agricultural sector. Since production, processing, distribution, and consumption all occur in various countries, the fisheries and aquaculture industries are extensively involved in international commerce. Particularly in developing nations, numerous coastal, riverine, island, and interior regions rely heavily on the fisheries and aquaculture industries for food security and economic stability. There are approximately 60 million full-time, part-time, and occasional fishers and fish producers worldwide (SOFIA, 2020).

In what ways can the issues associated with fish export be tackled?

Table 4: Ways that the issues associated with fish export can be tackled

ITEMS		SA	A	D	SD	Total % in support of the statement
Training of Farm workers on sourcing feed, raw materials, handling and processing procedure and storage	F	60	77	5	3	94.5
	%	41.4	53.1	3.4	2.1	
Good health records for each farm showing water quality records, fish ages, species, disease symptoms seen and other relevant data	F	77	65	1	2	98.0
	%	55.1	44.8	0.7	1.4	
Proper preparation, packaging and storage of Formulated feeds and commercial feeds	F	60	77	5	3	94.5
	%	41.4	53.1	3.4	2.1	
Setting up an animal laboratory for epidemiology, surveillance, disease reporting and control	F	35	89	15	6	85.5
	%	24.1	61.4	10.3	4.1	

Field survey (2023)

The purpose of the last research query was to investigate how salmon export issues can be addressed. More than 80 percent of respondents concurred with the following strategies for addressing salmon export issues, according to the findings of the study. Training of farm employees in the procurement of feed and basic materials, as well as in handling, processing, and storage procedures; Good health records for each farm, including water quality records, fish ages, species, and any disease symptoms observed; Proper formulation, packaging, and storage of Formulated and commercial feeds; and Establishing an animal laboratory for epidemiology, surveillance, and disease reporting and control

IV. Summary, Conclusion and recommendations

The challenges of fish production and export in Nigeria are the primary subject of this research. Despite its wealth of fisheries resources, Nigeria's fish trade is out of sync due to the country's over reliance on frozen fish imports at the expense of its more lucrative fishery product exports (Ochuko, Jerimoth, and Eyo, 2022). Nigeria's poor foreign profits from fish exports have been attributed to a variety of issues, including underexploitation of fisheries resources, an excessive dependence on the energy sector, and maritime piracy. Since then, export-focused fishing fleets have drastically shrunk, from over 230 boats to only 119, with just a handful of companies



remaining (Akinwumi, 2014). This research looks at the problems with fish production and export in Nigeria as a result of the country's poor showing in international fish trade. In order to answer three research objectives, this study largely used a descriptive survey to gather information from 152 fish farmers in Lagos, Nigeria.

The report highlights the following difficulties in shipping seafood abroad: Lack of proper documentation of imported fish; insufficient access to credit facilities; and a lack of necessary technical skills all contribute to poor governance in the management of fish stocks; illegal, unreported, and unregulated fishing; a lack of efficient quality and affordable farm-made feeds for various stages of fish development; and a lack of required technical skills.

The research also revealed the following about the relevance of fish exports to farming: The foreign currency gained by exporting fish is used to fund the procurement of other items, and export earnings, employment, and value addition all contribute to the expansion of the agricultural sector.

After analysing the data, the following solutions were found to the problems with Nigerian fish exports: Farm staff training on feed and basic materials purchasing, as well as handling, processing, and storage; Proper formulation, packing, and storage of Formulated and commercial feeds; Good water quality records for each farm; Records of fish ages, species, and any detected illness signs; Creating an animal research facility for the purpose of disease monitoring and reporting.

The research shows that Nigeria's fish exports are failing due to a number of challenges. The findings of this research call for action to counteract these shifts based on the proposed solution suggested in this study.

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QUESTIONNAIRE ON FISH PRODUCTION AND EXPORT CHALLENGES IN NIGERIA

Dear Respondent,
I am carrying out a study on “fish production and export challenges in Nigeria”, and you have been chosen to be part of the study. This questionnaire is only for academic purpose; it will not be used for any other purpose not otherwise stated. Kindly select the response which applies to you. All information will be kept confidential

SECTION A

Please tick () where appropriate

1. Gender: Female () Male ()
2. Age group: 18-30 () 31-40 () 41-50 () 50 and above ()
3. Number of years in fish farming: 1-5 (), 5-10 (), more than 10 years ()

SECTION B:

Instructions: Please tick (√) as appropriate where

Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).

S/N	ITEMS	SA	A	D	SD
RQ1	What are the challenges encountered in fish exportation?				
1	Poor governance in the management of fish stocks				
2	Illegal, unreported, and unregulated fishing				
3	Lack of efficient quality and inexpensive farm-made feeds for different stages of fish development				
4	Improper documentation of the imported fish				
5	Poor access to credit facilities				
6	Lack of requisite technical skills				
RQ2	What is the significance of fish exportation to the agricultural sector?				
7	Fish exportation impacts on the growth of the agricultural sector				
8	Generates export revenue, employment and value addition				
9	Foreign exchange from fish exports helps to finance imports of other foods				
RQ3	In what ways can the issues associated with fish export be tackled?				
10	Training of Farm workers on sourcing feed, raw materials, handling				



	and processing procedure and storage				
11	Good health records for each farm showing water quality records, fish ages, species, disease symptoms seen and other relevant data				
12	Proper preparation, packaging and storage of Formulated feeds and commercial feeds				
13	Setting up an animal laboratory for epidemiology, surveillance, disease reporting and control				